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- (54) **TASKBAR MEDIA PLAYER**
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(56) **References Cited**
U.S. PATENT DOCUMENTS

4,692,757 A	9/1987	Tsuhara et al.
5,060,170 A	10/1991	Bourgeois et al.
5,410,698 A	4/1995	Danneels et al.
5,463,726 A	10/1995	Price
5,473,745 A	12/1995	Berry et al.

(Continued)

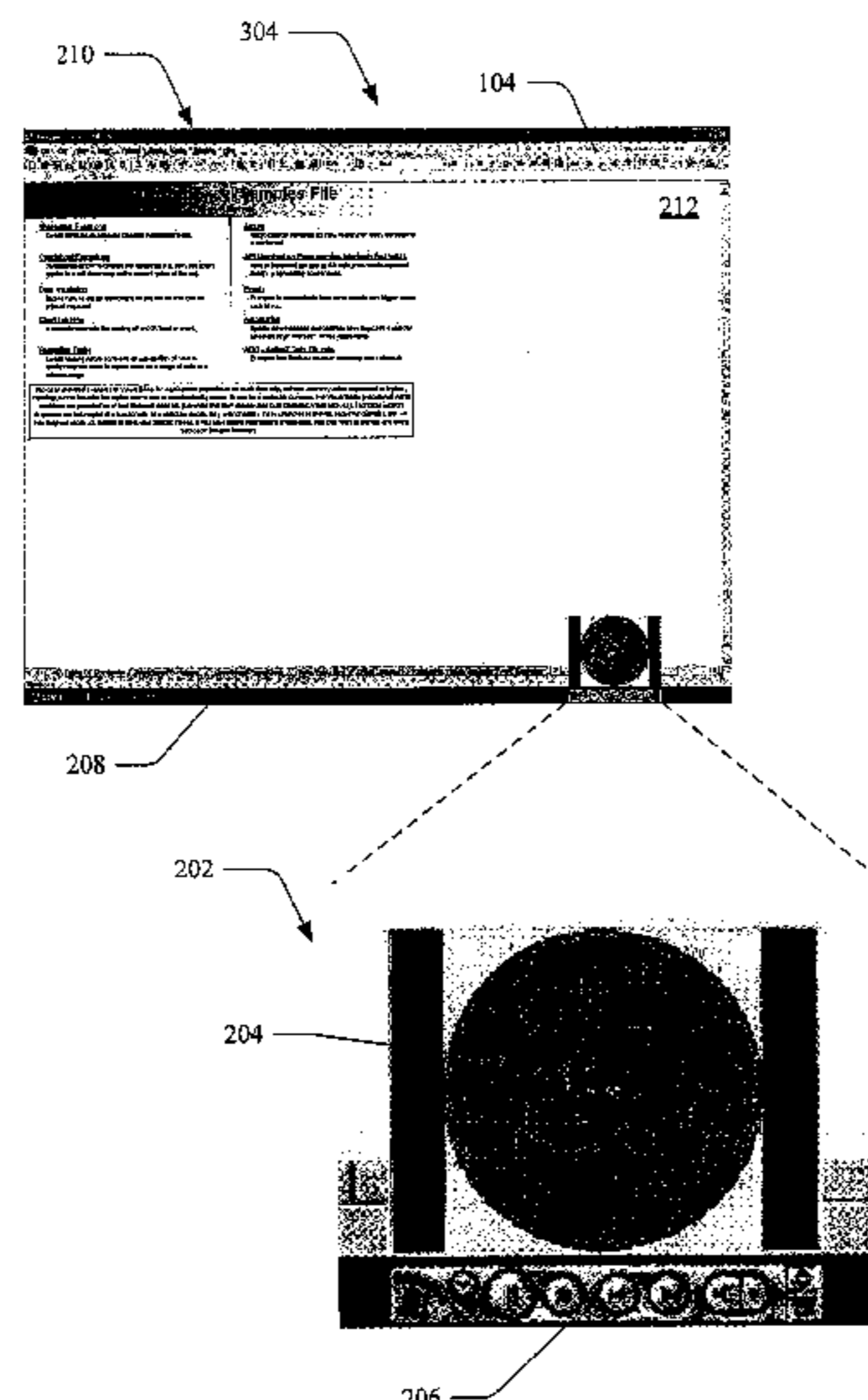
OTHER PUBLICATIONS
"Lycos, Inc., Sonique: Feb. 2001", Lycos, Inc., Version 1.90, (Feb. 2001), 52 pages.

(Continued)

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(57) **ABSTRACT**
A system and method for controlling media through a user interface integrated within a taskbar is described. This system and method enable a user to control media while a user interface of another application remains in perspective. Further, this system includes a taskbar media player, which can play media and enable a user to control the play of that media from within a taskbar.

20 Claims, 10 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,602,997 A 2/1997 Carpenter et al.
 5,657,049 A 8/1997 Ludolph et al.
 5,699,535 A 12/1997 Amro
 5,764,235 A 6/1998 Hunt et al.
 5,790,122 A 8/1998 Cecchini et al.
 5,883,626 A 3/1999 Glaser et al.
 5,923,326 A 7/1999 Bittinger et al.
 5,959,626 A 9/1999 Cecchini et al.
 5,959,628 A 9/1999 Cecchini et al.
 5,983,190 A 11/1999 Trower, II et al.
 5,986,667 A 11/1999 Jevans
 6,028,604 A 2/2000 Matthews, III et al.
 6,067,559 A 5/2000 Allard et al.
 6,072,486 A 6/2000 Sheldon et al.
 6,075,534 A 6/2000 VanBuskirk et al.
 6,097,380 A 8/2000 Crites et al.
 6,133,898 A 10/2000 Ludolph et al.
 6,141,003 A 10/2000 Chor et al.
 6,151,059 A 11/2000 Schein et al.
 6,177,931 B1 1/2001 Alexander et al.
 6,191,800 B1 2/2001 Arenburg et al.
 6,202,212 B1 3/2001 Sturgeon et al.
 6,219,042 B1 4/2001 Anderson et al.
 6,226,618 B1 5/2001 Downs et al.
 6,248,946 B1 6/2001 Dwek
 6,262,724 B1 7/2001 Crow et al.
 6,266,059 B1 7/2001 Matthews, III et al.
 6,300,947 B1 10/2001 Kanevsky
 6,313,851 B1 11/2001 Matthews, III et al.
 6,333,753 B1 12/2001 Hinckley et al.
 6,341,305 B2 1/2002 Wolfe
 6,344,865 B1 2/2002 Matthews, III et al.
 6,345,256 B1 2/2002 Milsted et al.
 6,348,932 B1 2/2002 Nishikawa
 6,357,042 B2 3/2002 Srinivasan et al.
 6,384,849 B1 5/2002 Morcos et al.
 6,389,403 B1 5/2002 Dorak, Jr.
 6,398,245 B1 6/2002 Gruse et al.
 6,452,609 B1 9/2002 Katinsky et al.
 6,469,721 B2 10/2002 Matthews, III et al.
 6,507,875 B1 1/2003 Mellen-Garnett et al.
 6,529,219 B1 3/2003 Baik et al.
 6,538,665 B2 3/2003 Crow
 6,624,831 B1 9/2003 Shahine et al.
 6,727,918 B1 4/2004 Nason
 6,850,256 B2 2/2005 Crow et al.
 6,859,937 B1 2/2005 Narayan et al.
 6,892,359 B1 5/2005 Nason et al.
 6,904,566 B2 6/2005 Feller et al.
 6,904,599 B1 6/2005 Cabrera et al.
 6,954,897 B1 10/2005 Noguchi et al.
 6,980,979 B2 12/2005 Huang et al.
 7,113,168 B2 9/2006 Oya et al.
 7,219,308 B2 5/2007 Novak et al.
 7,386,784 B2 6/2008 Capps et al.
 7,757,182 B2 7/2010 Elliott et al.
 7,796,141 B2 9/2010 Sheridan
 8,214,759 B2 7/2012 Elliott et al.
 8,453,056 B2 5/2013 Gupta
 9,275,673 B2 3/2016 Elliott et al.
 2001/0011995 A1 8/2001 Hinckley et al.
 2001/0033296 A1 10/2001 Fullerton et al.
 2002/0001395 A1 1/2002 Davis et al.
 2002/0002468 A1 1/2002 Spagna et al.
 2002/0033844 A1 3/2002 Levy et al.
 2002/0054137 A1 5/2002 Dvorak
 2002/0057287 A1 5/2002 Crow et al.
 2002/0069218 A1 6/2002 Sull et al.
 2002/0082730 A1 6/2002 Capps et al.
 2002/0099737 A1 7/2002 Porter
 2002/0103920 A1 8/2002 Berkun et al.
 2002/0104096 A1 8/2002 Cramer
 2002/0143976 A1 10/2002 Barker et al.
 2002/0157095 A1 10/2002 Masumitsu et al.
 2002/0184180 A1 12/2002 Debique et al.

2003/0030660 A1 2/2003 Dischert et al.
 2003/0044171 A1 3/2003 Otsuka et al.
 2003/0076346 A1 4/2003 Yun
 2003/0103079 A1 6/2003 Adatia
 2003/0105743 A1 6/2003 Ireton
 2003/0237043 A1 12/2003 Novak et al.
 2004/0006575 A1 1/2004 Visharam et al.
 2004/0098754 A1 5/2004 Vella et al.
 2004/0133564 A1 7/2004 Gross
 2004/0143564 A1 7/2004 Gross et al.
 2004/0172593 A1 9/2004 Wong et al.
 2004/0212640 A1 10/2004 Mann et al.
 2004/0267693 A1 12/2004 Lowe et al.
 2005/0005241 A1 1/2005 Hunleth et al.
 2005/0005308 A1 1/2005 Logan
 2005/0013589 A1 1/2005 Shah et al.
 2005/0044489 A1 2/2005 Yamagami et al.
 2005/0050301 A1 3/2005 Whittle et al.
 2005/0183017 A1 8/2005 Cain
 2005/0198220 A1 9/2005 Wada et al.
 2005/0234958 A1 10/2005 Sipusic et al.
 2006/0288111 A1 12/2006 Katinsky et al.
 2009/0119688 A1 5/2009 Gupta
 2010/0269043 A1 10/2010 Elliott

OTHER PUBLICATIONS

“Microsoft.com “Bill Gates Announces the Availability of Microsoft Windows XP Beta 2””, Internet:<http://www.microsoft.com/presspass/2001/Mar01/03-26XPBeta2Pr.msp-x>, (Mar. 26, 2001), pp. 1-4.
 @MAX Tray Player 0.97b, Jun. 21, 2003, 8 pgs.
 GustoSoft.com; All-in-one universal media player, Nov. 2002, <http://web.archive.org/web/20021130001235/http://gustosoftware.com/>, 7 pgs.
 Hancock et al., “Distributed parallel volume rendering on shared memory systems”, *Future Generation Computer Systems* 13 (1997/98) pp. 251-259, 1998 Elsevier Science B.V.
 Li, P. Peggy et al., “RIVA: A Versatile Parallel Rendering System for Interactive Scientific Visualization”, *IEEE Transactions on Visualization and Computer Graphics*, vol. 2, No. 3, Sep. 1996, pp. 186-201.
 Microsoft Press, “Microsoft Computer Dictionary”, Microsoft Computer Dictionary 5th Edition, (May 1, 2002), 3 pgs.
 Microsoft Press, “Microsoft Computer Dictionary”, Microsoft Computer Dictionary 5th Edition, (May 1, 2002), p. 423.
 Mystik Media, Jan. 2002, Blaze Tray Audio, <http://web.archive.org/web/20020122214802/http://www.trayaudio.com/> copyright 2001-2002, 15 pgs.
 Shin, Yongkyung et al., “A MPEG-4 Media Presenter on Real-Time OS”, PDPTA '00 International Conference, 2000, pp. 2310-2317.
 Shiova, “Pure Metal”, Lycos, Edition: Damaged. (Jul. 19, 1999), 4 pages.
 Stardock.net, DesktopX—tutorial, General Guide, 2002, 21 pgs.
 Stardock.net, Stardock Object Bar: The Ultimate Start Bar Replacement, Manual & Skinning Guide, 2002, 43 pgs.
 Sweierk, Edward et al., “The Roma Personal Metadata Service”, *Mobile Networks and Applications* vol. 7, (2002), pp. 407-418.
 Thurrott, Paul “Paul Thurrott’s SuperSite for Windows: Windows Media Player 8 Gallery”, Apr. 10, 2001, Internet:<http://www.winsupersite.com/showcase/windowsxp.sub.--wmp8.asp>, (Apr. 10, 2001), pp. 1-3.
 Thurrott, Paul, “Paul Thurrott’s SuperSite for Windows: Windows Xp Beta 2: The SuperSite Review”, Internet: <http://winsupersite.com/reviews/windowsxp.sub.--beta2.asp>, (Mar. 31, 2001), 1-13.
 U.S. Appl. No. 10/178,187, Advisory Action dated May 18, 2006, 3 pgs.
 U.S. Appl. No. 10/178,187, Amendment and Response filed Jan. 9, 2006, 26 pgs.
 U.S. Appl. No. 10/178,187, Amendment and Response filed Dec. 7, 2006, 22 pgs.
 U.S. Appl. No. 10/178,187, Amendment and Response filed Apr. 21, 2006, 25 pgs.
 U.S. Appl. No. 10/178,187, Amendment and Response filed Jun. 9, 2006, 23 pgs.

(56)

References Cited

OTHER PUBLICATIONS

U.S. Appl. No. 10/178,187, Notice of Allowance dated Mar. 13, 2007, 9 pgs.
U.S. Appl. No. 10/178,187, Office Action dated Oct. 17, 2005, 36 pgs.
U.S. Appl. No. 10/178,187, Office Action dated Feb. 24, 2006, 41 pgs.
U.S. Appl. No. 10/178,187, Office Action dated Sep. 7, 2006, 33 pgs.
U.S. Appl. No. 10/606,037, Advisory Action dated Mar. 5, 2009, 3 pgs.
U.S. Appl. No. 10/606,037, Amendment and Response filed Jan. 12, 2009, 13 pgs.
U.S. Appl. No. 10/608,037, Amendment and Response filed Jan. 15, 2008, 12 pgs.
U.S. Appl. No. 10/606,037, Amendment and Response filed Oct. 19, 2009, 14 pgs.
U.S. Appl. No. 10/606,037, Amendment and Response filed Mar. 13, 2007, 15 pgs.
U.S. Appl. No. 10/606,037, Amendment and Response filed Apr. 15, 2009, 13 pgs.
U.S. Appl. No. 10/606,037, Amendment and Response filed Jul. 28, 2008, 13 pgs.
U.S. Appl. No. 10/606,037, Amendment and Response filed Aug. 21, 2007, 15 pgs.
U.S. Appl. No. 10/606,037, Notice of Allowance dated Mar. 2, 2010, 8 pgs.
U.S. Appl. No. 10/606,037, Office Action dated Oct. 29, 2008, 20 pgs.
U.S. Appl. No. 10/606,037, Office Action dated Nov. 2, 2007, 23 pgs.
U.S. Appl. No. 10/606,037, Office Action dated Dec. 13, 2006, 19 pgs.
U.S. Appl. No. 10/606,037, Office Action dated Apr. 30, 2008, 27 pgs.
U.S. Appl. No. 10/606,037, Office Action dated Jun. 6, 2007, 18 pgs.
U.S. Appl. No. 10/606,037, Office Action dated Aug. 17, 2009, 16 pgs.
U.S. Appl. No. 11/108,479, Amendment and Response filed Jun. 24, 2003, 12 pgs.

U.S. Appl. No. 11/108,479, Amendment and Response filed Jun. 25, 2008, 13 pgs.
U.S. Appl. No. 11/108,479, Office Action dated Mar. 24, 2008, 13 pgs.
U.S. Appl. No. 11/108,479, Office Action dated Sep. 23, 2008, 18 pgs.
U.S. Appl. No. 12/262,556, Amendment and Response filed Oct. 22, 2012, 9 pgs.
U.S. Appl. No. 12/262,556, Amendment and Response filed Dec. 2, 2011, 19 pgs.
U.S. Appl. No. 12/262,556, Amendment and Response filed Jun. 8, 2011, 16 pgs.
U.S. Appl. No. 12/262,556, Notice of Allowance dated Jan. 2, 2013, 5 pgs.
U.S. Appl. No. 12/262,556, Office Action dated Mar. 30, 2011, 19 pgs.
U.S. Appl. No. 12/262,556, Office Action dated Sep. 14, 2012, 27 pgs.
U.S. Appl. No. 12/262,556, Office Action dated Sep. 2, 2011, 19 pgs.
U.S. Appl. No. 12/813,429, Amendment and Response filed Dec. 14, 2011, 9 pgs.
U.S. Appl. No. 12/813,429, Notice of Allowance dated Mar. 2, 2012, 9 pgs.
U.S. Appl. No. 12/813,429, Office Action dated Nov. 16, 2011, 14 pgs.
U.S. Appl. No. 13/495,766, Amendment and Response filed Oct. 27, 2014, 9 pgs.
U.S. Appl. No. 13/495,766, Amendment and Response filed Dec. 9, 2015, 3 pgs.
U.S. Appl. No. 13/495,766, Amendment and Response filed Aug. 12, 2015, 12 pgs.
U.S. Appl. No. 13/495,766, Notice of Allowance dated Sep. 9, 2015, 9 pgs.
U.S. Appl. No. 13/495,766, Office Action dated Feb. 12, 2015, 14 pgs.
U.S. Appl. No. 13/495,766, Office Action dated Jul. 25, 2014, 15 pgs.
Windows Explorer. Wikipedia, the free encyclopedia [online]. Wikipedia, 2008 [retrieved on Apr. 25, 2008]. Retrieved from the Internet: <URL: http://en.wikipedia.org/wiki/Windows_Explorer>, 14 pgs.

Fig. 1

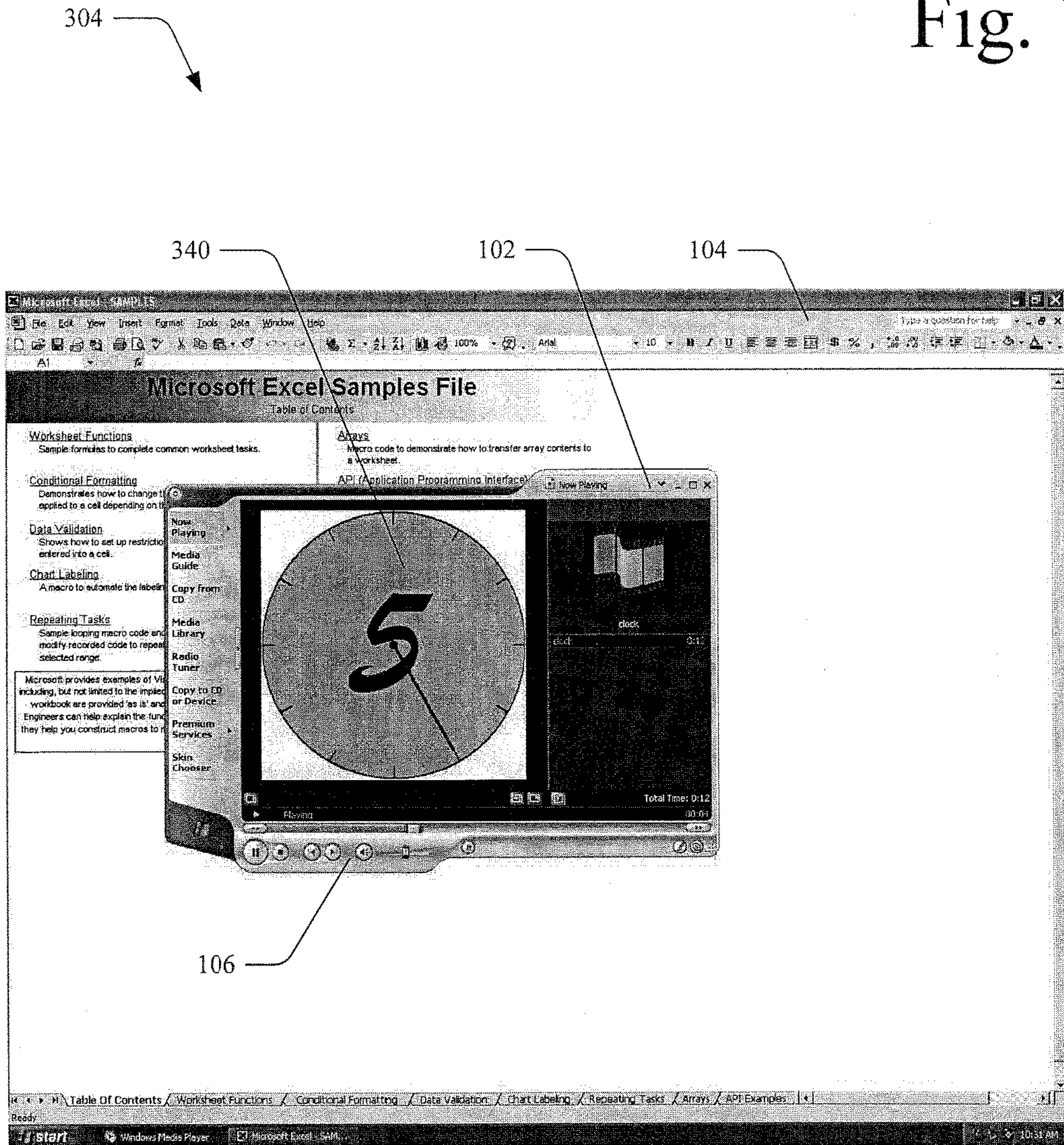
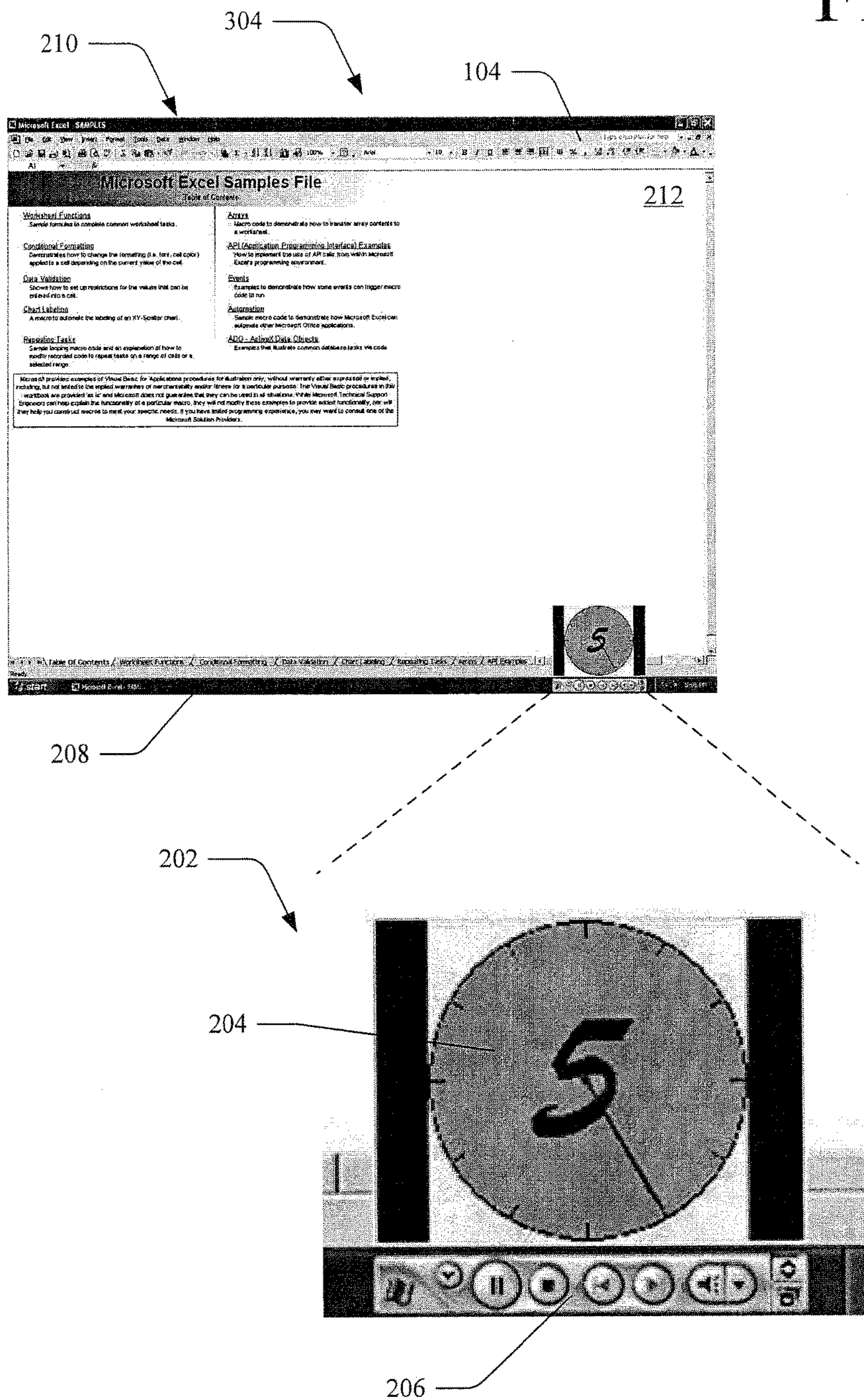


Fig. 2



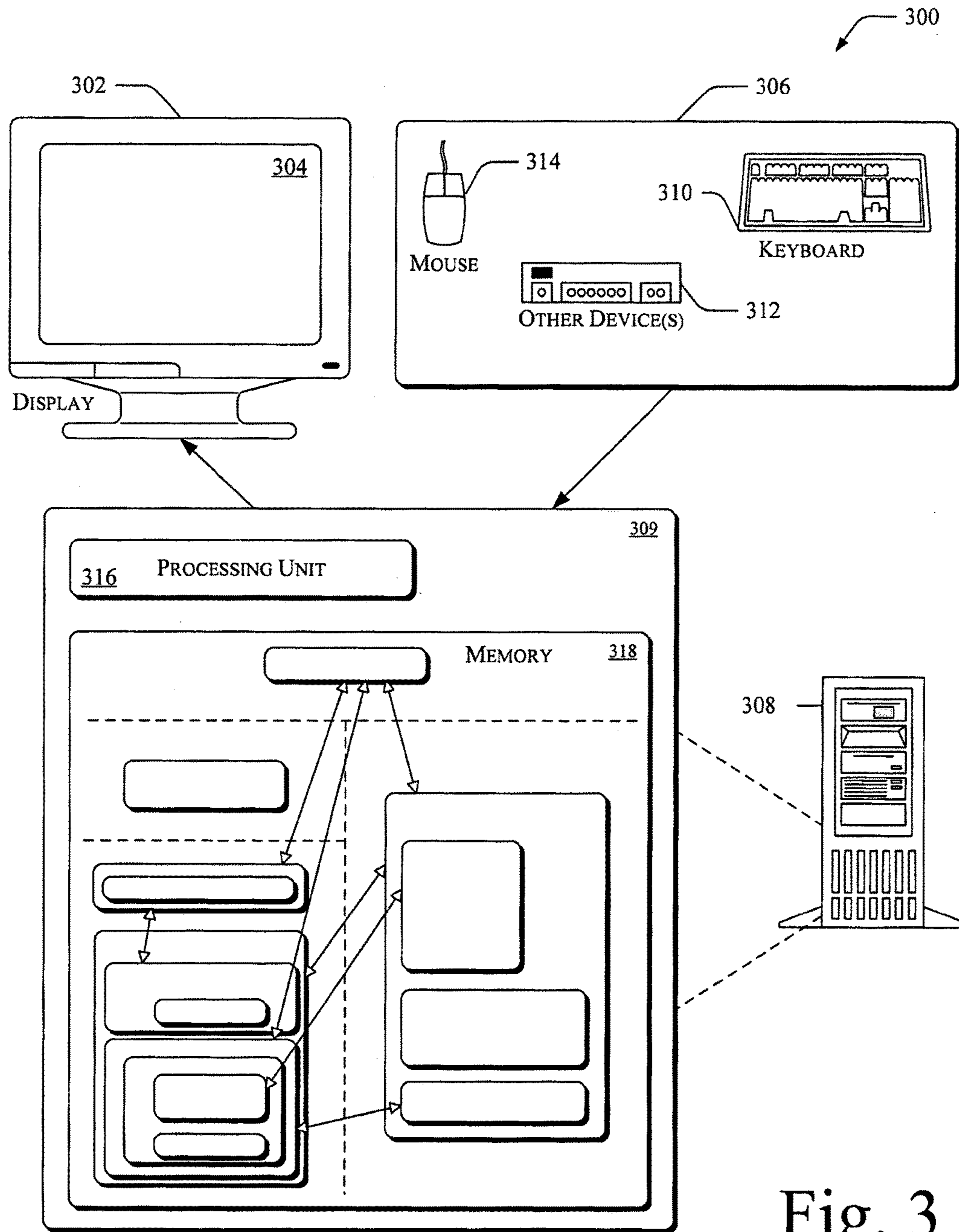


Fig. 3

Fig. 4

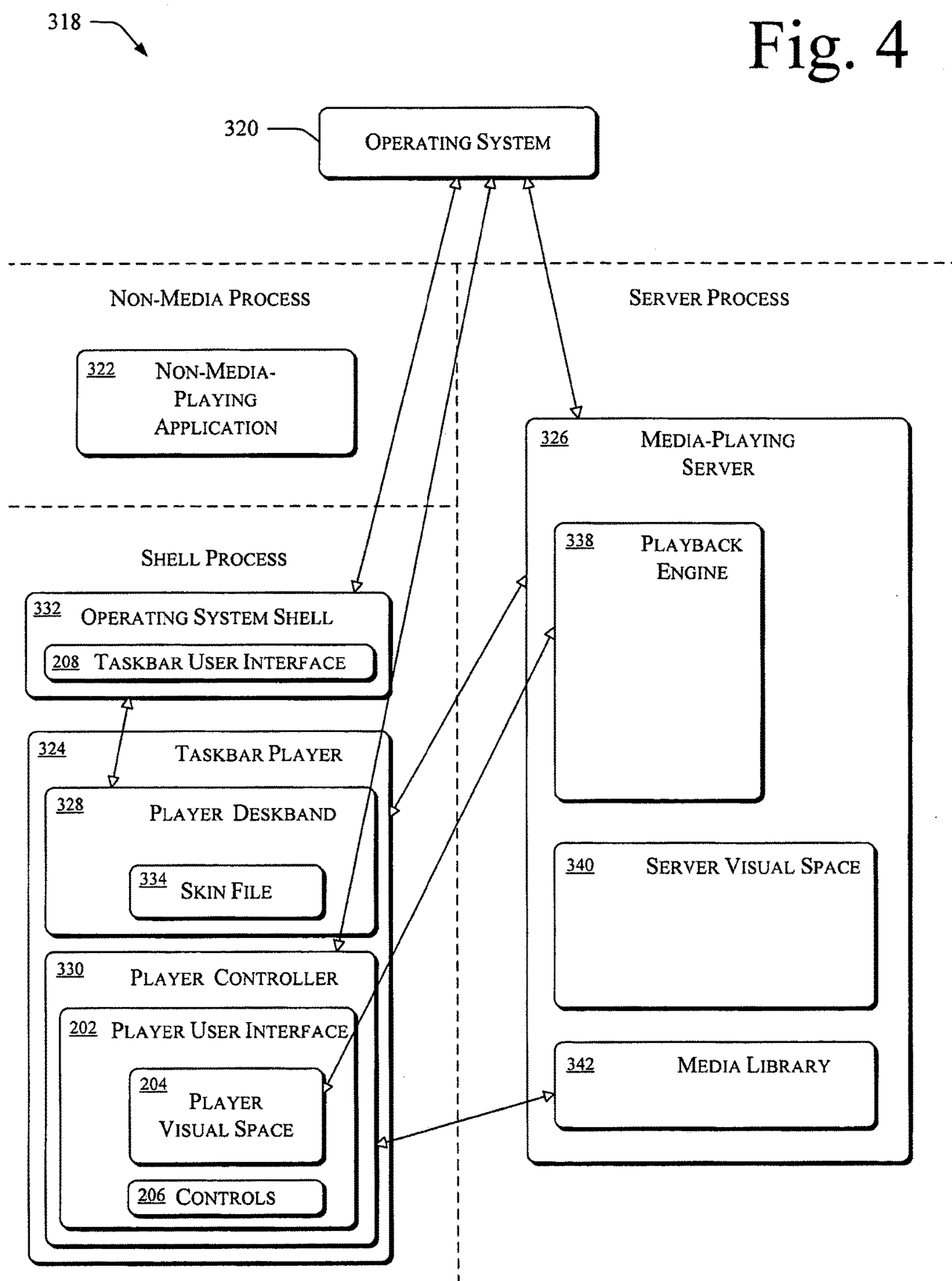
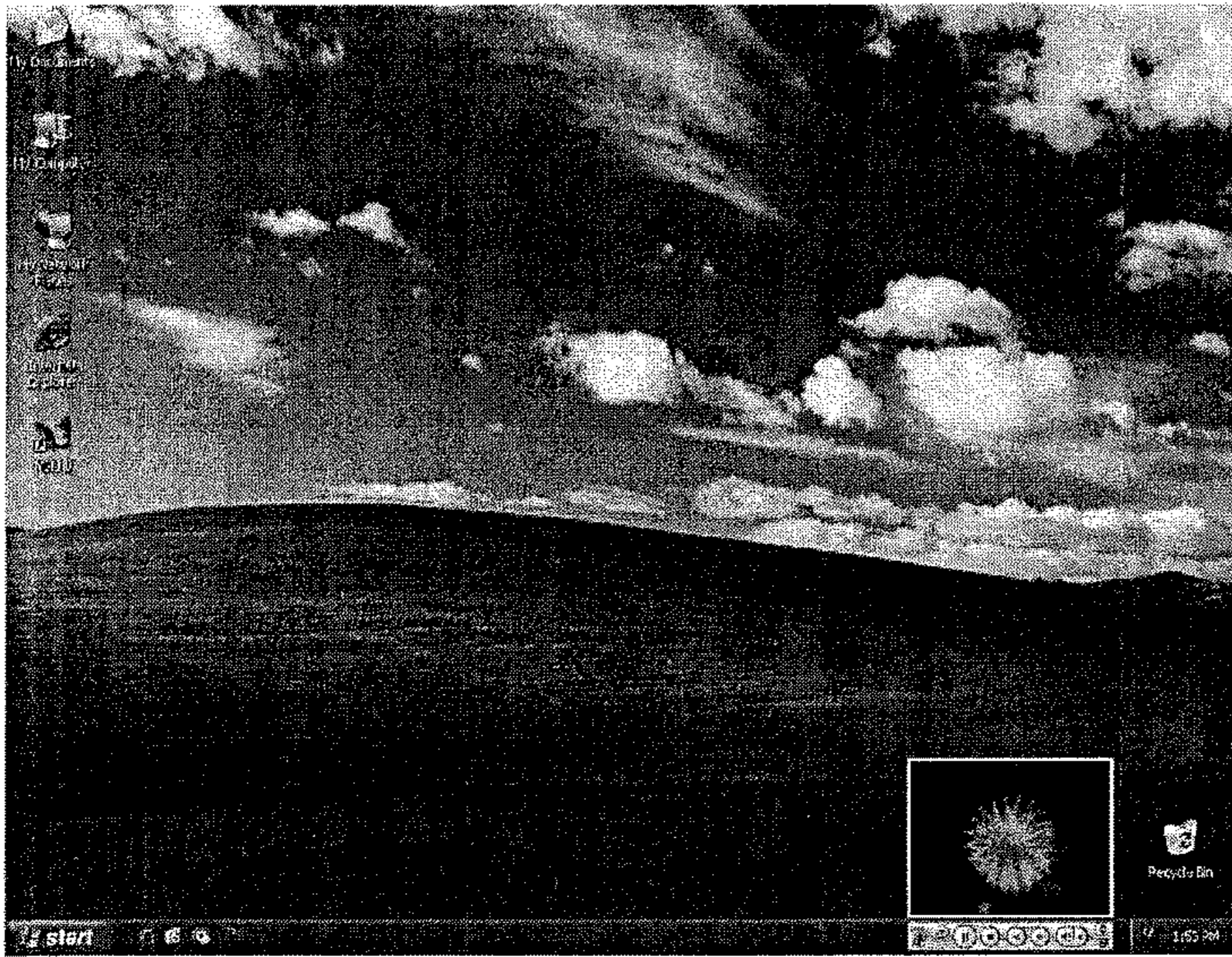


Fig. 5



304

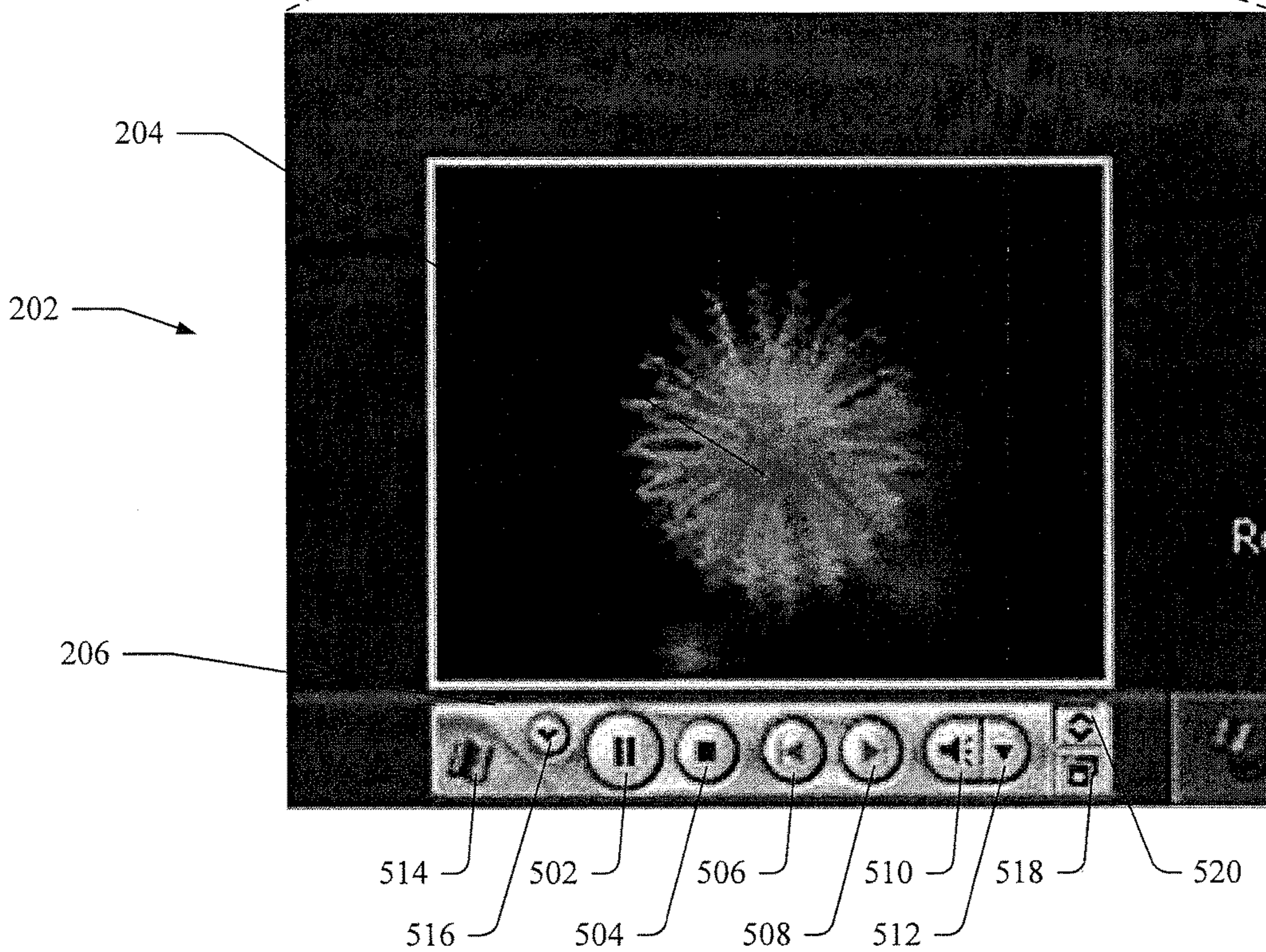


Fig. 6

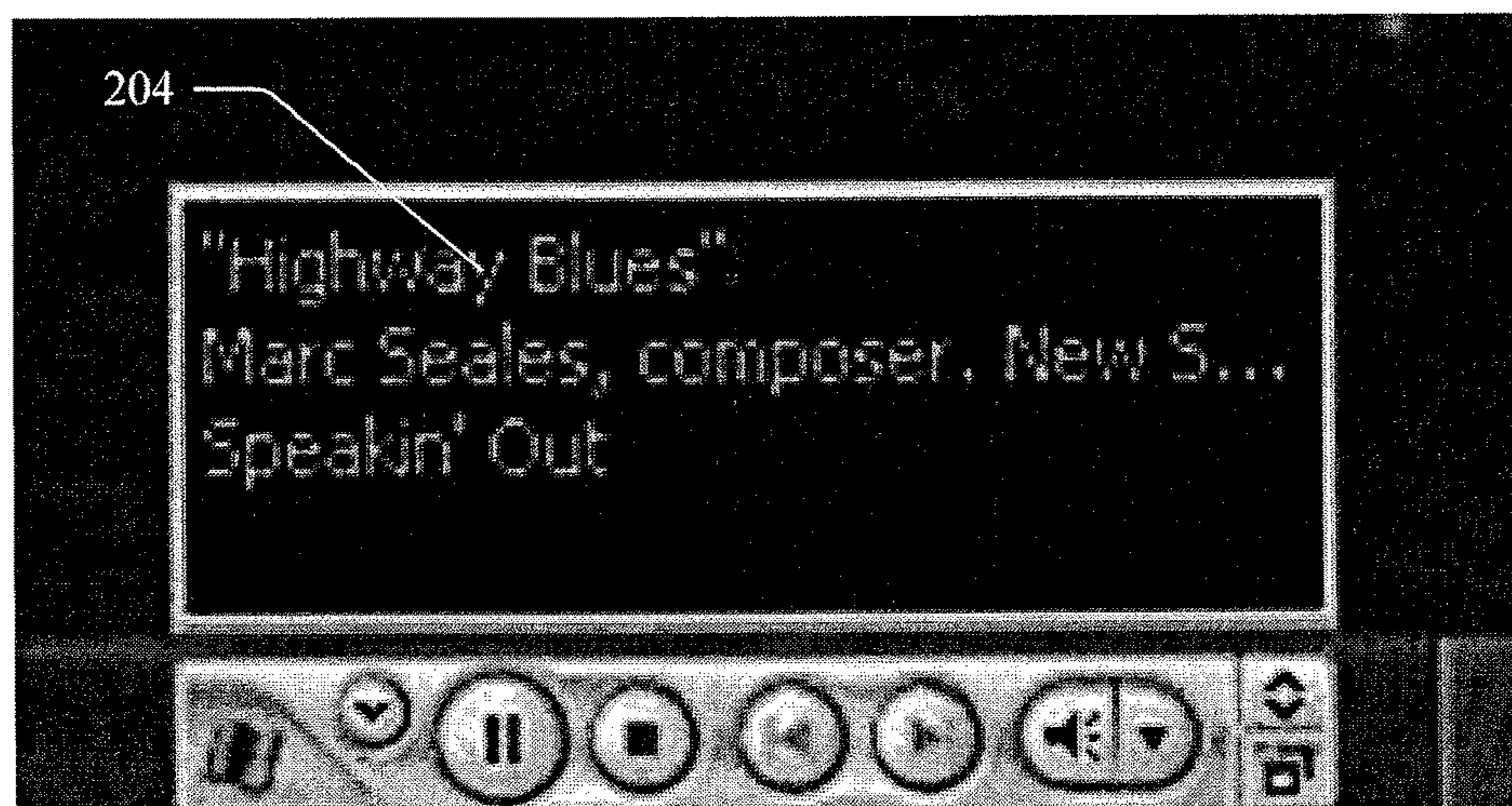
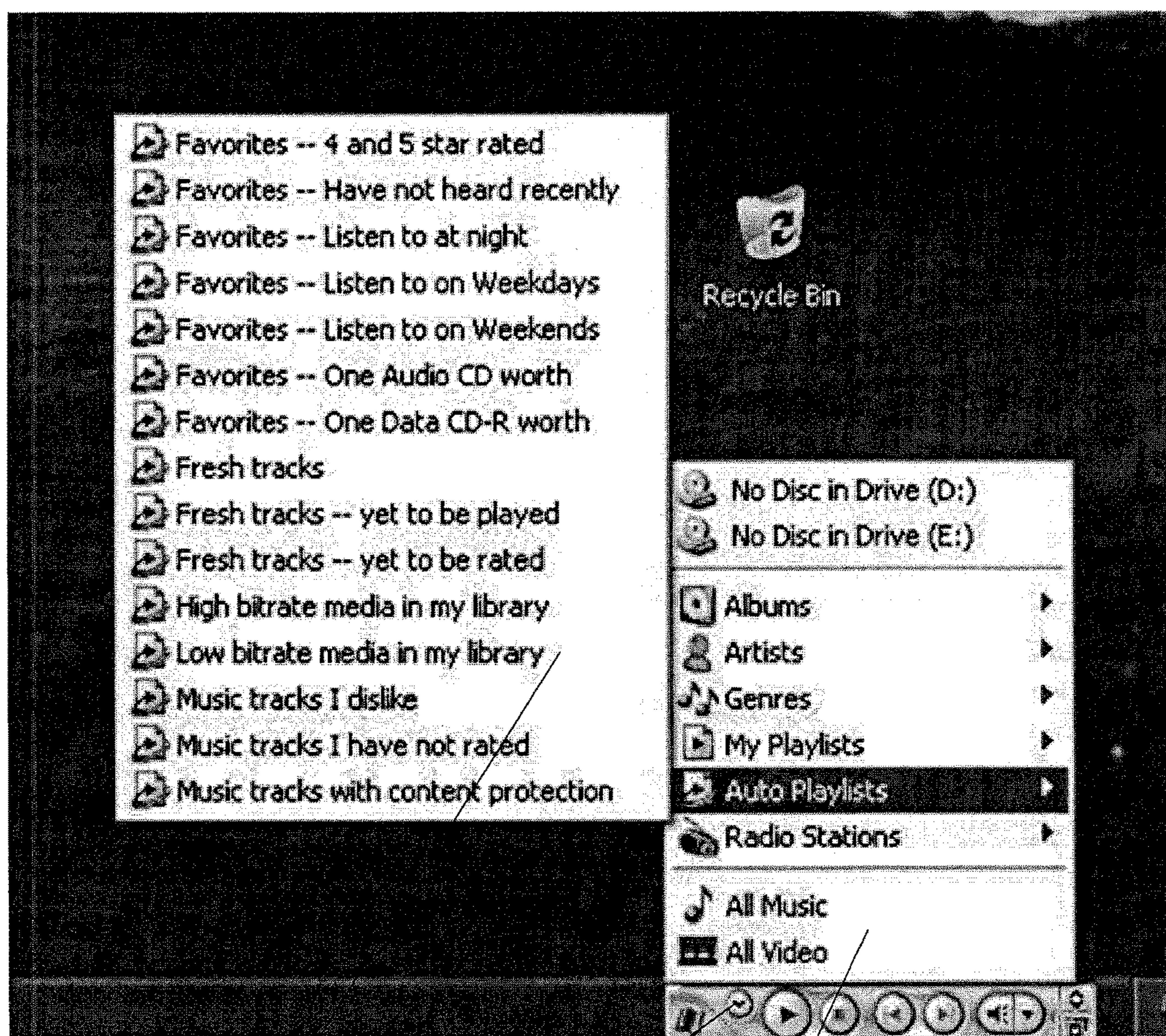


Fig. 7



704

516

702

800




Fig. 8

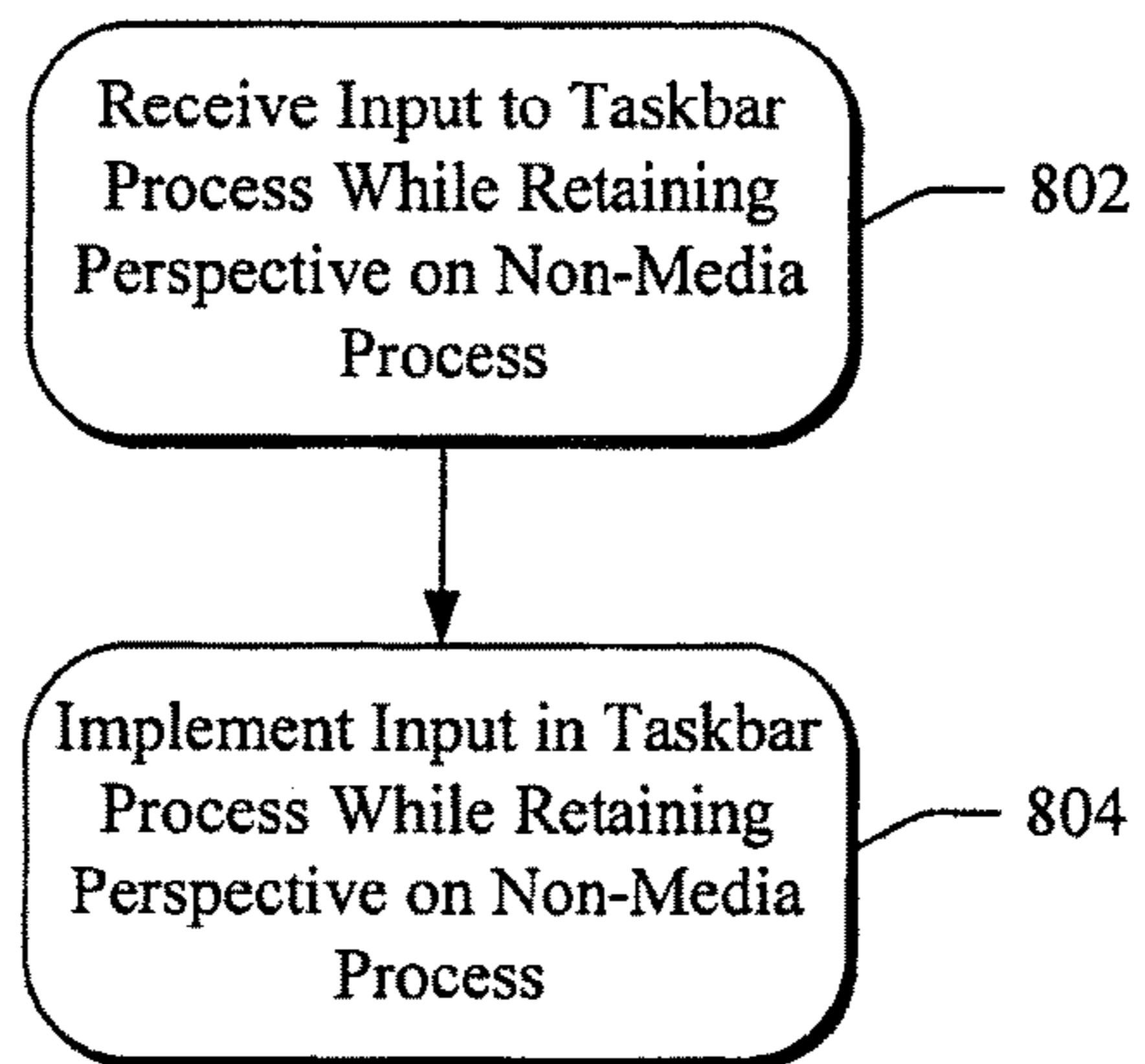


Fig. 9

900 ↘

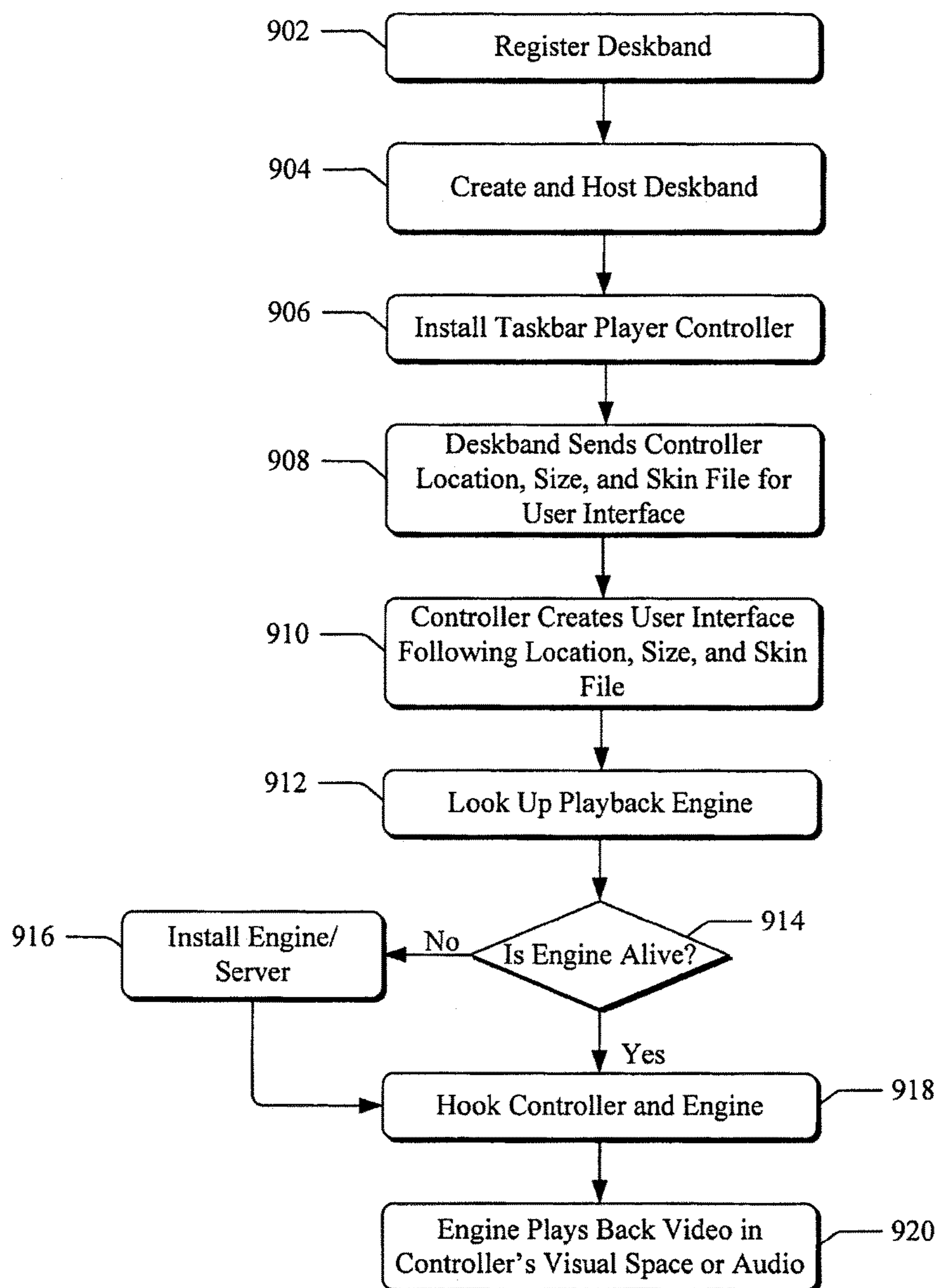
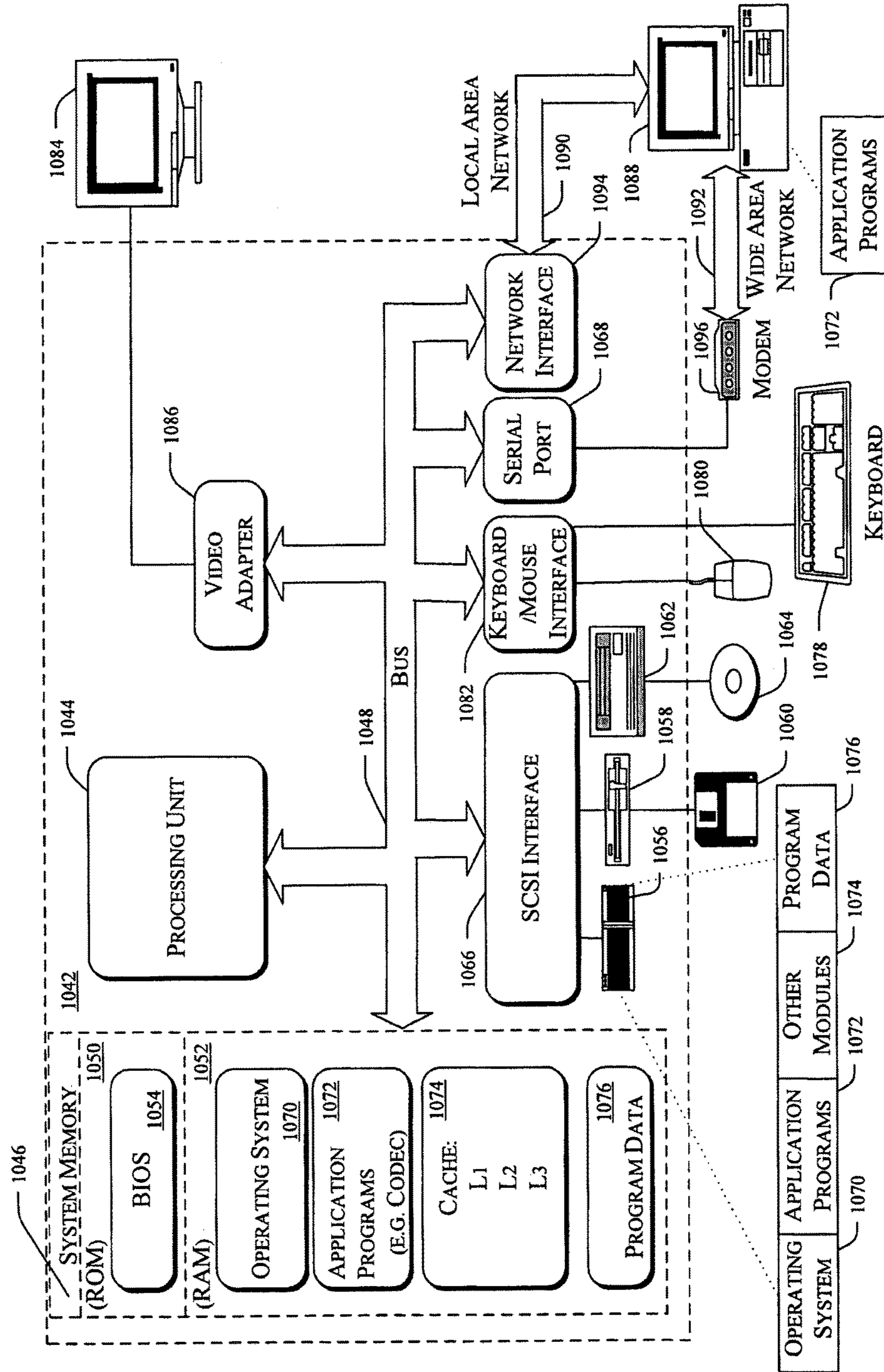


Fig. 10



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TASKBAR MEDIA PLAYER

RELATED APPLICATIONS

This application is a continuation of and claims priority to U.S. patent application Ser. No. 13/495,766, entitled "TASKBAR MEDIA PLAYER," filed Jun. 13, 2012, now U.S. Pat. No. 9,275,673, issued Mar. 1, 2016, which is a continuation of U.S. patent application Ser. No. 12/813,429, entitled "Taskbar Media Player," filed on Jun. 10, 2010, now U.S. Pat. No. 8,214,759, issued Jul. 3, 2012, which is a continuation of U.S. patent application Ser. No. 10/606,037, entitled "Taskbar Media Player," filed on Jun. 25, 2003, now U.S. Pat. No. 7,757,182, issued Jul. 13, 2010, each of which is hereby incorporated by reference in their entirety.

BACKGROUND

Computer users like to multitask. That is, they like to interact with more than one service at once. Some applications, such as Microsoft's® MSN8 Internet Software®, allow users to interact with multiple types of services without needing to interact with multiple applications. MSN8 allows, for example, a user to browse the Internet and at the same time enjoy and control media, like hear and control a song, or see and control a video clip. Most applications, however, do not provide a user with a media player to enjoy media at the same time as perform other tasks in the application. For example, most word processing and email applications—in which many users spend a great deal of time working—do not provide users with a media player to enjoy and control media.

Users can work around this problem with non-media applications in some limited ways, however. A user can open a media player to provide media-playing services. Once interacting with the media player's window (and thus not the non-media application's window) the user can have the media player play media, like a video clip or a song. Once the media is playing, the user can then switch back to the non-media application to work in and interact with the non-media application, and the media can continue playing.

One problem with this, however, is that to control the media being played, the user has to switch perspective from the non-media-playing application back to the media player. A user interface or window that is not in perspective cannot fully interact with a user, such as by receiving input from a user and actively display information to the user.

Thus, the user has to cease working in and interacting with the non-media application to interact with the media player's window so that the user can control the media being played. The user often cannot change the volume, advance to another song on a CD being played, or otherwise control the media without first disengaging from the non-media application's window, initializing engagement with the media player's window to put it in perspective, and make the control change. After this the user still has to re-engage with the non-media application's window to go back to working in and interacting with the non-media application.

At the least, most users have to take the time and effort to click on the media player's window to put it in perspective, make the control (such as by clicking on a fast forward button), and click on the other application to bring it back into perspective. This can be three mouse-clicks, for each of which the user may have to locate and move the mouse to a particular spot. This can take an appreciable amount of time, in part because the user has to perform it, but also if a computer system running these applications takes time to

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bring these applications in and out of perspective. Thus, this switching back and forth between applications in order to control media can be time consuming and inconvenient for a user.

User interfaces for typical media-playing applications can also be inconvenient. Many user interfaces for media-playing applications take up significant space on the screen, possibly interfering with the user's interaction with the non-media-playing application.

In FIG. 1, for example, a media-playing application's window **102** obscures a non-media-playing application's window **104**.

Also, the controls on these user interfaces can become obscured by other user interfaces (like windows), making them hard to find. If, for example, the non-media-playing application's window **104** were brought back into perspective, such as by bringing it into focus (not shown), the window **104** could cause a media-playing application's controls **106** to be obscured by the non-media-playing application's window **104**. This is because a window or user interface that is in focus will usually be brought to the forefront, thereby potentially obscuring other windows and user interfaces.

This further inconvenience makes typical media-playing applications difficult to use when also using a non-media-playing application. With typical media-playing applications, the user has to locate the controls, which could be obscured or moved, bring into perspective the user interface (such as by clicking on the media-playing application's window), select a service through the control, and then go back to the non-media-playing application's window in which the user wishes to continue working.

Current systems and methods do not provide users with sufficient ability to control media unless the application being used contains a media player. For applications that do not, users often cannot conveniently and quickly control media when also working in another application.

SUMMARY

The following description and figures describe a system and method for playing and controlling media with a player integrated into a taskbar. This system and method enables a user to control media quickly and easily through controls in a taskbar, as well as view visual media in a visual space connected to the taskbar.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates exemplary user interfaces for a non-media-playing application and a media-playing application.

FIG. 2 illustrates an exemplary user interface for a non-media-playing application and a taskbar media player's user interface, the taskbar media player showing a graphic in its visual space.

FIG. 3 illustrates a computer system for a taskbar media player.

FIG. 4 illustrates an architecture showing a non-media-playing application's process, an operating system shell process, and a media-playing server's process and applications running within them, which are within the memory of the computer system of FIG. 3.

FIG. 5 illustrates an exemplary user interface of a taskbar media player showing a visualization in a visual space.

FIG. 6 illustrates an exemplary user interface of a taskbar media player showing metadata in a visual space.

FIG. 7 illustrates an exemplary user interface of a taskbar media player showing dialog boxes in a visual space for selection of metadata.

FIG. 8 is a flow diagram of an exemplary method for controlling media through a user interface without switching perspective to that user interface.

FIG. 9 is a flow diagram of an exemplary method for creating and using a taskbar media player.

FIG. 10 is a block diagram of a computer system that is capable of implementing a method for controlling media through a taskbar player.

The same numbers are used throughout the disclosure and figures to reference like components and features.

DETAILED DESCRIPTION

The following disclosure describes a media player integrated into a taskbar. This taskbar media player and its related methods enable a user to control media quickly and easily, even if the user is working in another application. Unlike current media players, the taskbar media player's controls do not get in the way of other applications' windows, and do not require a user to bring the player into perspective or cease perspective with other applications in order to interact with it. This saves a user time and effort. The taskbar player also includes a visual space for viewing visual media, which can make viewing media while also working in another application more convenient than in the current state of the art. In short, this taskbar player and related methods allow a user to more easily control and view media.

In FIG. 1, for example, the non-media-playing application's window 104 is obscured by the media-playing application's controls 106. If, on the other hand, the non-media-playing application were brought back into perspective (not shown), the window 104 could obscure the media-playing application's controls 106 and window 102.

In FIG. 2, however, an example of a taskbar media player's user interface 202 is shown. In this example the player user interface 202 includes a visual space 204 displaying a similar graphic as shown in FIG. 1. The player user interface 202 also includes controls 206, shown integrated into an exemplary taskbar user interface 208 shown at the bottom of an exemplary screen shot 210. In this example the player controls 206 remain visible and ready for use even if the non-media-playing application and its window 104 are in perspective.

Exemplary System

Overview

FIG. 3 shows an exemplary system 300 usable to create a taskbar media player and facilitate related methods. The system 300 includes a display 302 having a screen 304, a user-input device 306, and a computer 308. The user-input device 306 can include any device allowing a computer to receive input from a user, such as a keyboard 310, other devices 312, and a mouse 314. The other devices 312 can include a touch screen, a voice-activated input device, a track ball, and the like. The user can send input via the user-input device 306 to the computer 308 to control media, for instance. The user can use the display 302 and its screen 304 to view user interfaces, including those containing visual media. FIGS. 1, 2, and 5 show examples of the screen 304.

The computer 308 includes components shown in block 309, such as a processing unit 316 to execute applications and a memory 318 containing various applications and the

processes that contain them. The memory 318 includes volatile and non-volatile memory and the applications described in FIG. 4.

FIG. 4 shows applications included within the memory 318 of FIG. 3, communication between these programs (shown as solid lines), and process boundaries (shown as dashed lines). The memory 318 includes an operating system 320, a non-media-playing application 322, a taskbar player 324, and a media-playing server 326. The non-media-playing application 322 can be one of many different types. One exemplary type is a Microsoft® Excel® spreadsheet application shown in FIGS. 1 and 2.

The Taskbar Player

The taskbar player 324 includes a player deskband 328 and a player controller 330. The player deskband 328 communicates with an operating system shell 332, which in turn communicates with the operating system 320.

The operating system shell 332 is an application that implements a user interface that is tightly integrated with the operating system 320. This tight integration allows the operating system shell 332 and the operating system shell process in which it runs additional flexibility not available to other processes and the applications that run within them.

The player deskband 328 is a program module that communicates with the operating system shell 332. The player deskband 328 determines parameters for how the taskbar player 324 is to operate with the operating system shell 332. The player deskband 328 stores these parameters for later use by the taskbar player 324 in a skin file 334.

This skin file 334 helps the taskbar player 324 build the player user interface 202. Parameters held in the skin file 334, for instance, include a size and position in the operating system shell's 332 user interface 208 that the taskbar player 324's user interface 202 is allotted. The skin file 334 and the player user interface 202 will be discussed in greater detail below.

Through the communication between the player deskband 328, the operating system shell 332, and the operating system 320, the player deskband 328 enables the player user interface 202 (and the taskbar player 324) to be integrated with the operating system shell 332.

This integration with the operating system shell 332 allows, for instance, the taskbar player's 324 controls 206 to not take up available screen space beyond that used by the operating system shell 332. The controls 206 do not have to take up available space because the controls 206 can be integrated into the existing user interface used by the operating system shell 332 (here the taskbar user interface 208). Because the controls 206 do not have to take up available screen space, the controls 206 do not have to alter an existing layout or behavior of other application's user interfaces. The controls 206, for instance, can be implemented such that they do not obscure or require movement or resizing of other user interfaces (such as a non-media-playing application user interface 212 of FIG. 2).

Also by being integrated, the taskbar player 324 operates with the operating system shell 332 and executes within the shell process, allowing the taskbar player 324 to interact with a user but still allow interaction between the user and an in-perspective application or process, such as the non-media-playing application 322.

The operating system shell 332 can interact with a user without being in perspective, even though it can appear to be in perspective. Thus, to a user the taskbar player 324 acts as if it is in perspective, allowing the user to interact with its player user interface 202 without first selecting the player user interface 202 to put it into perspective. Also, the user

does not have to leave the non-media-playing application 322, thereby putting it out of perspective, to interact with operating system shell 332 (and thus the integrated taskbar player 324).

The player deskband 328 also can build the skin file 334. The skin file 334 contains parameters useful in building the player user interface 202 into the taskbar user interface 208. These parameters can include text, art, and script parameters, which can govern the text used in, the graphics and look of, and various other parameters governing the player user interface 202. The other parameters can include the position, size, and operating specifications for the player user interface 202. These other parameters can be attained by the player deskband 328 through communication with the operating system shell 332. In one implementation, a user can choose and alter text, art, and script parameters so that the player user interface 202 conforms to the user's preferences. These preferences can be retained by the taskbar player 324 or the operating system shell 332.

Also through this communication, the player deskband 328 can instruct the operating system shell 332 to dedicate a minimum size and a particular position for the player user interface 202 in the operating system shell's 332 user interface 208.

The player controller 330 implements the player user interface 202. The player controller 330, in one implementation, is an ActiveX control, which is integrated into the taskbar player 324. The player user interface 202 creates the taskbar player visual space 204 and the controls 206 from which a user can select various media services. The taskbar player visual space 204 is a space on the screen 304, such as in a window, in which visual media can be displayed.

FIG. 5 shows an example of the screen 304, the player user interface 202, the taskbar player visual space 204, and the controls 206.

The player user interface 202 can, through the controls 206, or otherwise, enable a user to control media. The controls 206 include various control buttons for easy selection of a media-playing service. A user can, for instance, use the mouse 314 to click on the control buttons on the player controls 206.

In one implementation, the user can select the following services by clicking on (or, in some cases, hovering their mouse icon over) the following control buttons: that the media file be paused with a pause control button 502; that the media file be stopped with a stop control button 504; that the taskbar player 324 go to a previous track in the media file (such as a compact disc playing album tracks) with a previous track control button 506; similarly, that the taskbar player 324 go to a next track with a next track control button 508; that a volume for the media file be muted/unmuted with a mute control button 510; that the volume for the media file be increased or decreased with a volume control button 512; that metadata for the media file be presented (or options for metadata) with a metadata control button 514; that the taskbar player visual space 204 be hidden or shown with visual space control button 520; that the taskbar player 324 switch play of the media file to a larger, more advanced media player like the media-playing server 326 with an advanced services control button 518; or that a menu for the media library 342 be presented with a library button 516.

The player user interface 202 can also enable the user to play a media file by allowing the user to drag-and-drop a system object (e.g., an icon) representing a media file onto the controls 206, the taskbar player visual space 204, or another part of the player user interface 202.

The taskbar player 324 is capable of playing back audio files, visual files, a combination of both (like a music video), television, photos, and the like. The taskbar player 324 is also capable of presenting metadata, like information about songs on a CD being played or other media accessible by the taskbar player 324.

FIG. 6 shows an example of metadata presented through the player user interface 202, shown in the taskbar player visual space 204. This metadata includes facts about a particular song, here that the song being played is entitled "Highway Blues," was composed by "Marc Seales," and is from an album named "Speakin' Out." The metadata can be accessed by the taskbar player 324 through the media-playing server 326, internal to the taskbar player 324, or otherwise. The metadata can be selected for viewing by the user with the metadata control button 514 shown in FIG. 5.

The player user interface 202 can also enable the user to search through media (and related metadata) in the media library 342. In one implementation, the player user interface 202 enables the user to pick through metadata.

FIG. 7 shows an example of one way in which the player user interface 202 enables a user to pick through metadata within a media library 342. FIG. 7 shows the library button 516 and a media selection dialog box 702 allowing the user to select various media categories. FIG. 7 also shows a list of media files selected by the user through the media selection dialog box 702 ("Auto Playlists"), shown in a media files dialog box 704. This list includes information about playlists of media files. It includes information about files the user has rated highly, plays often, has not played recently, listens to on weekdays, listens to on weekends, has not played, has not rated yet, and dislikes. It also includes information about files that are new to the user or are protected, as well as information about high and low bitrate media files available.

As shown in this example and further above, the taskbar player 324 enables a user to enjoy many services with an easy-to-use graphical interface.

The Media-Playing Server

The media-playing server 326 includes a playback engine 338, a server visual space 340, and the media library 342. An example of the server visual space 340 is shown in FIG. 1. The server visual space 340 comprises a portion of the computer's 308 graphical display area, that the media-playing server 326 governs and through which it presents graphical information to the user. The space is typically a window or a portion of a window.

The playback engine 338 renders media files in the player visual space 204 and plays audio. It can also render and play media for the media-playing server 326. The playback engine 338 is shown in FIG. 4 as part of the media-playing server 326, but can be internal to the taskbar player 324 or run inside an operating system shell process in which the taskbar player 324 runs.

The playback engine 338, in this implementation, runs as part of the media-playing server 326 to enable a user to switch play of a media file to another process (like the server process of FIG. 4). Thus, if the user wants to expand the media being played to a larger space with advanced services, the user can do so. The taskbar player 324 enables the user, such as with the advanced services control button 518 on the controls 206 as shown in FIG. 5, to switch rendering of the media file to the media-playing server 326 to enjoy more advanced services. An example of the media-playing server 326 presenting a media file in the server visual space 340 is shown in FIG. 1.

The taskbar player **324** can use the playback engine **338** for other services, like rendering metadata or visualizations in the taskbar player visual space **204**. In the implementation shown in FIG. 4, however the taskbar player **324** renders metadata and visualizations internally.

The taskbar player's **324** player controller **330** can use the media library **342** in the server process shown in FIG. 4. The taskbar player **324** can also use its own library (not shown).

The above devices and applications are merely representative, and other known devices and programs may be substituted for or added to those shown in FIGS. 3 and 4. One example of another known device that can be substituted for those shown in FIGS. 3 and 4 is the device shown in FIG. 10.

Control of Media Overview

FIG. 8 shows a flow diagram **800** for enabling a user to control media while working in a non-media-playing application. This and the following flow diagram are illustrated as series of blocks representing operations or acts performed by the system **300**. These diagrams may be implemented in any suitable hardware, software, firmware, or combination thereof. In the case of software and firmware, they represent sets of operations implemented as computer-executable instructions stored in memory and executable by one or more processors.

In the flow diagram **800**, the system **300** enables a user to interact with the player user interface **202**, thereby allowing control of media, without losing perspective on the non-media-playing application **322**. The user is able to continue working in the non-media-playing application **322** while also being able to control media.

The system **300** also enables a user to interact with the player user interface **202** without needing to bring the player user interface **202** into perspective.

In one implementation, the system enables a user to interact with the player user interface **202** without needing to bring the player user interface **202** into focus.

At block **802**, the system **300** receives input through the player user interface **202** to control media without the player user interface **202** being in perspective and/or other applications losing perspective. By so doing, the system **300** saves the user time and energy. The user can select, with as little as one command (such as a mouse click), to stop, start, pause, move to next track, and alter the media's visual space or volume. Further, the user can do so while working in the non-media-playing application **322** without interrupting his or her work with the non-media-playing application's **322** window or user interface.

FIG. 2 shows an example of the screen **304** displaying an example of the non-media-playing application user interface **212** generated by the non-media-playing application **322**, and the player user interface **202**. Here the non-media-playing application user interface **212** remains in perspective, thereby allowing a user to interact and otherwise work in the non-media-playing application **322**. By being in perspective, the non-media-playing application **322** can continue to interact with the user. This interaction can include display of ongoing functions, like new email being received, computations being run, and results of the computations being shown. This interaction can also include enabling the user to input commands and otherwise interact with the non-media-playing application **322**.

While keeping the non-media-playing application **322** in perspective, the system **300** allows the user to interact with the player user interface **202** to control media. In this example a media file being played includes a graphic, shown

in the taskbar player visual space **204** of FIG. 2. The user can control the media played through selecting services with control buttons on the controls **206** (such as the buttons shown in FIG. 5), drop-down lists, keystroke-entered commands, and in other manners.

In one implementation, the system **300** enables a user to control media as if the media user interface were part of or integrated with the non-media-playing application **322**. In this implementation, the system **300** enables the user to control media running in another process (here the operating system shell process) while interacting with the non-media-playing process without interrupting the user's interaction with the non-media-playing process. Thus, the system **300** allows reception of input into the operating system shell process while retaining perspective on the non-media-playing application **322** running in the non-media-playing process (shown in FIG. 4).

At block **804**, the system **300** controls the media in accordance with input received from the user. The system **300** is able to implement the control received by the taskbar player **324** while retaining perspective on the non-media-playing application **322** executing in another process.

A user can, for example, work in the non-media-playing application's **322** user interface **212** (which is in perspective), such as by typing information or selecting files, thereby interacting with the non-media-playing application **322**. Then, while retaining perspective and full interactive capabilities with the non-media-playing application's **322** user interface **212**, click on the controls **206** to select media-playing services. Following this selection, the taskbar player **324** can implement the selected service, such as forwarding to another track on an audio CD. The user is able to continue interacting with the non-media-playing application's **322** user interface **212** without having to bring back into perspective a window of the user interface **212** or perform other actions that may interrupt the user. This allows the user to efficiently work with the non-media-playing application **322** while also interacting with and controlling media running in the taskbar player **324**.

Implementing the Taskbar Player

FIG. 9 shows an exemplary implementation in flow diagram **900** for creating and using the taskbar player **324**.

In block **902**, the system **300** registers the taskbar player deskband **328**. Then the operating system shell **332** creates and hosts the taskbar player deskband **328** (block **904**). This deskband **328** can communicate with the operating system shell **332**. The deskband **328** communicates with the operating system shell **332** to gain parameters for how the system **300** is to structure the player user interface **202** of the player controller **330**. These parameters can be included in the skin file **334**.

In block **906**, the system **300** installs the player controller **330**. This player controller **330** is responsible for building the player user interface **202**, the taskbar player visual space **204**, and the controls **206**.

In block **908**, the deskband **328** communicates with the controller **330** to relay the parameters for the player user interface **202**. These parameters can be retained within the skin file **334**. The skin file **334** includes the location, size, and various appearance parameters for the player user interface **202** to conform.

In block **910**, the player controller **330** creates the user interface **202** conforming to the parameters in the skin file **334**.

FIG. 2 shows an example of the player user interface **202**. Here the player user interface **202** is built with a certain size (measured in pixels), a certain location (to the far right in the

taskbar user interface **208**), with a certain appearance (the controls **206** being colored grey and the manner to select services being buttons), and with the taskbar player visual space **204** having a particular size and location directly above the controls **206**.

In block **912**, the system **300** looks up the playback engine **338**. The system **300** can use the player controller **330** to communicate with the operating system **320** to find the playback engine **338**. The operating system **320** can then search through the server process to find the media-playing server **326** and/or the playback engine **338**.

At block **914**, if the playback engine **338** is not alive, the system **300** proceeds along the “No” path to block **916**. If it is, it proceeds along the “Yes” path to block **918**.

At block **916**, the system **300** creates the playback engine **338** and, in some cases also the media-playing server **326**.

At block **918** the system **300** hooks the player controller **330** to the playback engine **338**. Here, the taskbar player **324** is communicating with the media-playing server **326**, and the playback engine **338** is hooked to the player controller **330**. The playback engine **338** can be hooked to the player controller **330** using a messaging system or architecture of the operation system **320**. In one implementation, where the operating system **320** is a Windows® operating system, Windows® messaging is used. These are hooked so that the playback engine can render a visual media file or play an audio media file (or both) for the player controller **330**.

Thus, in cases where the playback engine **338** is asked to render video for the player controller **330**, the playback engine **338** renders video directly to the taskbar player visual space **204**, which the taskbar player visual space **204** then presents (block **920**).

In cases where the playback engine **338** is playing back audio, it communicates the audio to speakers and the like, rather than the player controller **330** (block **920**), though non-audio (such as accompanying video or information about or accompanying the audio) is still communicated to the player controller **330**.

The playback engine **338** runs in another process and can run within the media-playing server **326** to allow a user to easily and quickly switch presentation of video or playback of audio to the media-playing server **326**. This media-playing server **326** can offer many advanced services, which the user may wish to enjoy. Having the playback engine **338** run in this other process is not necessary for use of the taskbar player **324**, but can aid the user in switching back and forth between the media-playing server **326** and the taskbar player **324**.

A Computer System

FIG. **10** shows an exemplary computer system that can be used to implement the processes described herein. Computer **1042** includes one or more processors or processing units **1044**, a system memory **1046**, and a bus **1048** that couples various system components including the system memory **1046** to processors **1044**. The bus **1048** represents one or more of any of several types of bus structures, including a memory bus or memory controller, a peripheral bus, an accelerated graphics port, and a processor or local bus using any of a variety of bus systems. The system memory **1046** includes read only memory (ROM) **1050** and random access memory (RAM) **1052**. A basic input/output system (BIOS) **1054**, containing the basic routines that help to transfer information between elements within computer **1042**, such as during start-up, is stored in ROM **1050**.

Computer **1042** further includes a hard disk drive **1056** for reading from and writing to a hard disk (not shown), a magnetic disk drive **1058** for reading from and writing to a

removable magnetic disk **1060**, and an optical disk drive **1062** for reading from or writing to a removable optical disk **1064** such as a CD ROM or other optical media. The hard disk drive **1056**, magnetic disk drive **1058**, and optical disk drive **1062** are connected to the bus **1048** by an SCSI interface **1066** or some other appropriate interface. The drives and their associated computer-readable media provide nonvolatile storage of computer-readable instructions, data structures, program modules and other data for computer **1042**. Although the exemplary environment described herein employs a hard disk, a removable magnetic disk **1060** and a removable optical disk **1064**, it should be appreciated by those skilled in the art that other types of computer-readable media which can store data that is accessible by a computer, such as magnetic cassettes, flash memory cards, digital video disks, random access memories (RAMs), read only memories (ROMs), and the like, may also be used in the exemplary operating environment.

A number of program modules may be stored on the hard disk **1056**, magnetic disk **1060**, optical disk **1064**, ROM **1050**, or RAM **1052**, including an operating system **1070**, one or more application programs **1072** (such as the taskbar player **324**), other program modules **1074**, and program data **1076**. A user may enter commands and information into computer **1042** through input devices such as a keyboard **1078** and a pointing device **1080**. Other input devices (not shown) may include a microphone, joystick, game pad, satellite dish, scanner, or the like. These and other input devices are connected to the processing unit **1044** through an interface **1082** that is coupled to the bus **1048**. A monitor **1084** or other type of display device is also connected to the bus **1048** via an interface, such as a video adapter **1086**. In addition to the monitor, personal computers typically include other peripheral output devices (not shown) such as speakers and printers.

Computer **1042** commonly operates in a networked environment using logical connections to one or more remote computers, such as a remote computer **1088**. The remote computer **1088** may be another personal computer, a server, a router, a network PC, a peer device or other common network node, and typically includes many or all of the elements described above relative to computer **1042**. The logical connections depicted in FIG. **10** include a local area network (LAN) **1090** and a wide area network (WAN) **1092**. Such networking environments are commonplace in offices, enterprise-wide computer networks, intranets, and the Internet.

When used in a LAN networking environment, computer **1042** is connected to the local network through a network interface or adapter **1094**. When used in a WAN networking environment, computer **1042** typically includes a modem **1096** or other means for establishing communications over the wide area network **1092**, such as the Internet. The modem **1096**, which may be internal or external, is connected to the bus **1048** via a serial port interface **1068**. In a networked environment, program modules depicted relative to the personal computer **1042**, or portions thereof, may be stored in the remote memory storage device. It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

Generally, the data processors of computer **1042** are programmed by means of instructions stored at different times in the various computer-readable storage media of the computer. Programs and operating systems are typically distributed, for example, on floppy disks or CD-ROMs. From there, they are installed or loaded into the secondary

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memory of a computer. At execution, they are loaded at least partially into the computer's primary electronic memory. The invention described herein includes these and other various types of computer-readable storage media when such media contain instructions or programs for implementing the blocks described below in conjunction with a micro-processor or other data processor. The invention also includes the computer itself when programmed according to the methods and techniques described herein.

For purposes of illustration, programs and other executable program components such as the operating system are illustrated herein as discrete blocks, although it is recognized that such programs and components reside at various times in different storage components of the computer, and are executed by the data processor(s) of the computer.

CONCLUSION

The above-described system includes a taskbar player, which enables a user to control and play media from a taskbar. The taskbar player and related methods also enable the user to control media while remaining in perspective with another application. Although the invention has been described in language specific to structural features and/or methodological acts, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed as exemplary forms of implementing the claimed invention.

The invention claimed is:

1. A computer-implemented method comprising: presenting a media player user interface that is integrated into an existing taskbar of an operating system, the media player user interface including one or more media player controls, wherein the media player user interface is displayed with a first portion in the existing taskbar and a second portion outside the existing taskbar, wherein the second portion displays a visualization and/or graphic associated with media being played by the media player, and wherein the control of the media is based on the input received by the media player user interface while retaining perspective on a second user interface of a non-media-playing application; and enabling, without the media-player user interface being in perspective, user interaction with the one or more media player controls.
2. The computer-implemented method of claim 1, wherein the enabling includes enabling the user interaction with the one or more media player controls without disengaging from a non-media-playing application.
3. The computer-implemented method of claim 2, wherein the non-media-playing application remains in focus during the user interaction with the one or more media player controls.
4. The computer-implemented method of claim 1, wherein the enabling includes enabling the user interaction with the one or more media player controls without first receiving selection of the media player user interface.
5. The computer-implemented method of claim 1, wherein the enabling includes enabling the user interaction with the one or more media player controls with a single command.
6. The computer-implemented method of claim 5, wherein the single command comprises a single mouse click on the one or more media player controls.

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7. The computer-implemented method of claim 5, wherein the single command comprises a single mouse hover on the one or more media player controls.

8. The computer-implemented method of claim 5, wherein the media player user interface is presented on a touch screen display, and wherein the single command comprises a single touch on an area of the touch screen display corresponding to the one or more media player controls.

9. A computer-readable storage medium comprising computer-executable instructions that, when executed by a computer, perform a method comprising:

presenting a media player user interface with one or more media player controls in an existing taskbar of an operating system, wherein the media player user interface is displayed with a first portion in the existing taskbar and a second portion outside the existing taskbar, wherein the second portion displays a visualization and/or graphic associated with media being played by the media player, and wherein the control of the media is based on the input received by the media player user interface while retaining perspective on a second user interface of a non-media-playing application; and enabling selection of the one or more media player controls with a single command.

10. The computer-readable storage medium of claim 9, wherein enabling the selection comprises enabling selection of the one or more media player controls with a single mouse click or a single mouse hover on the one or more media player controls.

11. The computer-readable storage medium of claim 9, wherein the one or more media player controls are presented on a touch screen display, and wherein enabling the selection comprises enabling selection of the one or more media player controls with a single touch on an area of the touch screen display corresponding to the one or more media player controls.

12. The computer-readable storage medium of claim 9, wherein enabling the selection comprises enabling selection of the one or more media player controls with the single command when a non-media-playing application is in perspective.

13. The computer-readable storage medium of claim 12, wherein the perspective includes the non-media-playing application being in focus.

14. The computer-readable storage medium of claim 9, wherein enabling the selection comprises enabling selection of the one or more media player controls with the single command without the one or more media player controls being in perspective.

15. The computer-readable storage medium of claim 9, wherein the one or more media player controls include buttons for selection of media player services.

16. The computer-readable storage medium of claim 9, wherein the one or more media player controls include at least one of a play control, a pause control, or a stop control.

17. The computer-readable storage medium of claim 9, wherein enabling the selection comprises enabling selection of the one or more media player controls with a single command and without first receiving selection of the one or more media player controls to put the controls into perspective.

18. A computer-implemented method comprising: receiving input to a taskbar media player to control media while retaining perspective on a user interface of a non-media-playing application, wherein the media player user interface is displayed with a first portion in

the existing taskbar and a second portion outside the existing taskbar, wherein the second portion displays a visualization and/or graphic associated with media being played by the media player, and wherein the control of the media is based on the input received by the media player user interface while retaining perspective on a second user interface of a non-media-playing application; and

controlling the media based on the input received by the taskbar media player while retaining perspective on the user interface of the non-media-playing application.

19. The computer-implemented method of claim **18**, wherein the input comprises a single mouse click or a single mouse hover on a media player control of the taskbar media player.

20. The computer-implemented method of claim **19**, further comprising enabling interaction with the user interface of the non-media-playing application after the input is received and without first receiving selection of the user interface of the non-media-playing application to put the user interface of the non-media-playing application into perspective.

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